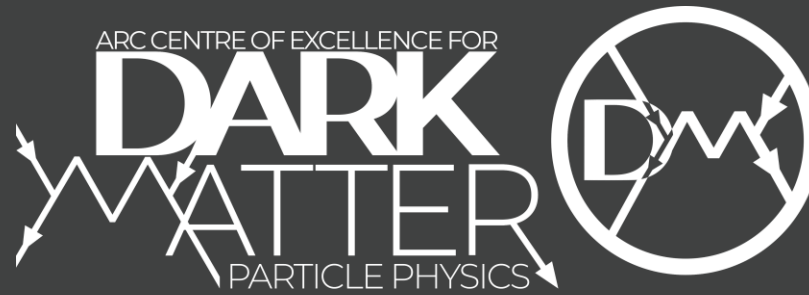


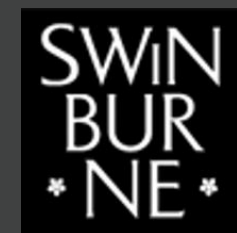
# Australia Highlights for IPPOG

Outreach and Education programs for the Centre for Dark Matter Particle Physics





# Regional Partner School Collaborations



# Who are we?

Jackie Bondell

- Education and Public Outreach Coordinator, ARC Centre of Excellence for Dark Matter Particle Physics
- [jackie.bondell@unimelb.edu.au](mailto:jackie.bondell@unimelb.edu.au)
- @jtkst10 (Twitter)
- Background:
  - Physics Teaching
  - Curriculum Design
  - Teacher Mentoring
  - Accessibility in STEM
  - Technology in Education



# Why Dark Matter in Education

- Encapsulates the Nature of Science and Scientific Inquiry
- Broad Science content – galaxies, gravity, particles
- Connections with labs and scientists – work here in Australia
- Fascination!



# Why this collaboration?

## From the perspective of Stawell Secondary:

- Regional schools limited by geography and resourcing
- Great opportunity to expose our students to cutting edge science
- Regional Victoria may well need to cultivate science in areas such as agriculture, renewable energies etc
- Challenges as regional students don't find it easy to adapt to the big city

## This project appeal was because:

- Highly relational involvement, not just a gizmo in the mail.
- It was about the learning and real outcomes
- For a regional school Stawell SC has a high proportion of young and enthusiastic leaders

# Why this collaboration?

## From the CDM Perspective

- Highlight STEM pathways for students
- Increase PD opportunities and resources for Regional Teachers
- Provide relatable role-models for students, especially girls
- Bring science to regions and inspire with science happening locally
- Access of STEM programs to underserved schools
- Opportunity to build in engagement happening locally
- Build an understanding of the importance of big science for society
- Keen principal, enthusiastic students, honest feedback on improving programs to create broad appeal

# What are we doing together?

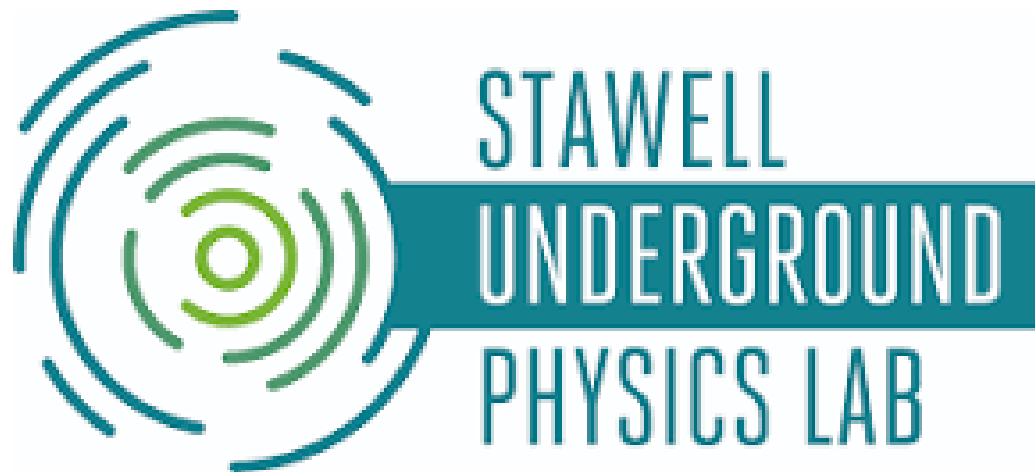
## Creating Dark Matter Partner Schools

- High-impact, long-term engagement with partner schools
  - Longitudinal, Relevant, Measurable Impact
- Leverage partnerships to incorporate unique experiences for students and teachers
- Target opportunities for regional students and teachers
- Create content to continually be used by teachers
- Diverse cohort of centre scientists engaging with students





# Examples of how we are doing this!





# Media Highlight...



**ABC NEWS**

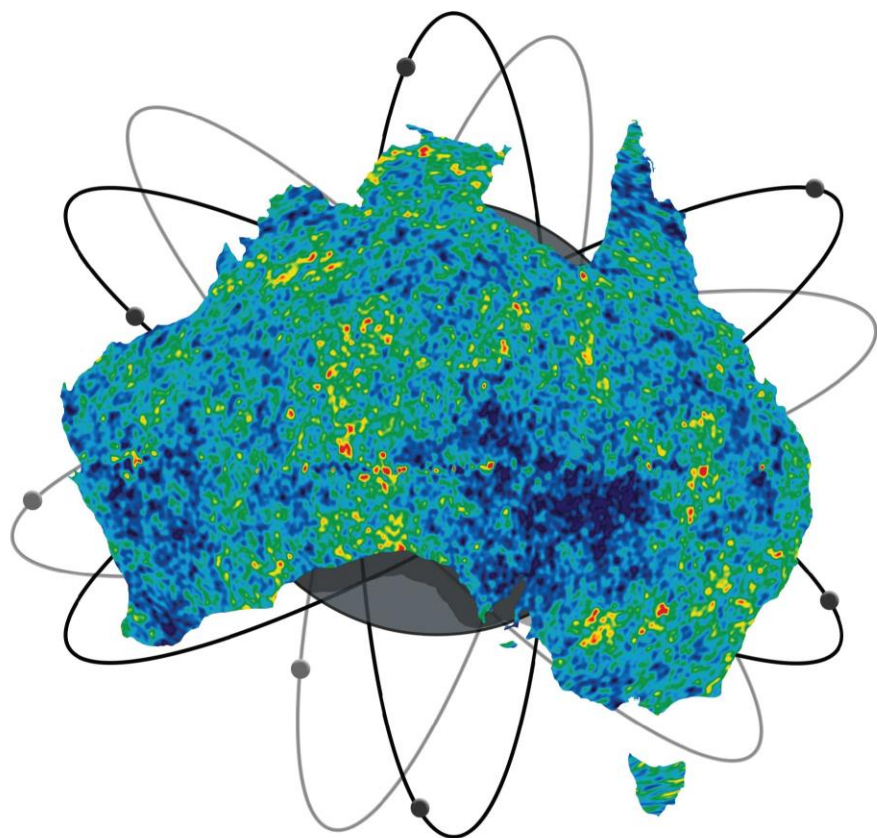
Learning face-to-face with actual scientists, students can now plot their own...

## Learning face-to-face with actual scientists, students can now plot their own career path in science

[ABC Wimmera](#) / By Alexander Darling

Posted Mon 27 Mar 2023 at 7:40am

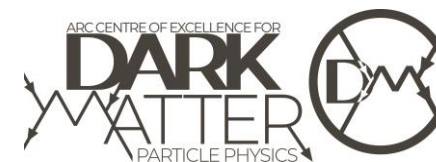




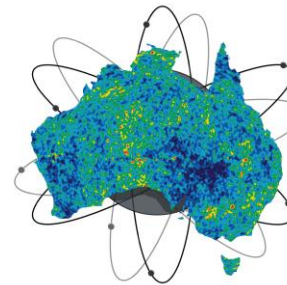
# NATIONAL

Quantum & Dark Matter

# ROAD TRIP





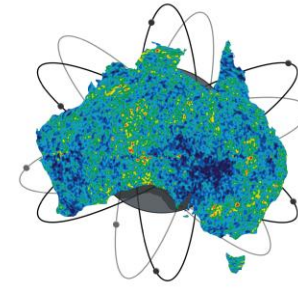


# NATIONAL Quantum & Dark Matter ROAD TRIP

## What's the Road Trip?



# What's the Road Trip?



**NATIONAL**  
Quantum & Dark Matter  
**ROAD TRIP**



An Australian-wide celebration of science  
and technology that runs every year in August.

The Quantum Dark Matter Road Trip travelled to Schools and  
public spaces to take our science around Australian Communities!



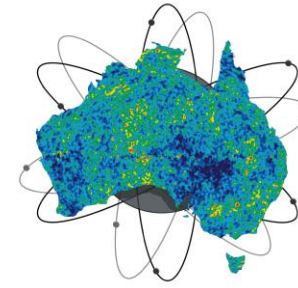
**Brisbane/  
Meanjin  
8th August**



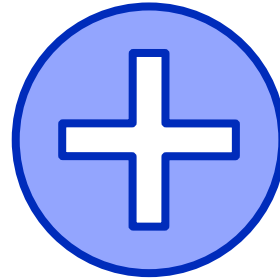
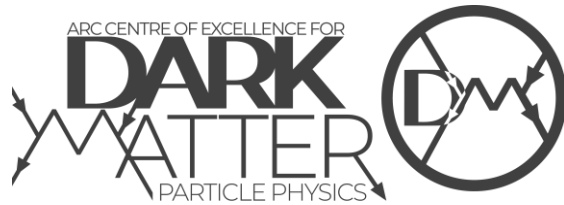
**Perth/  
Boorloo  
26th August**



# Who Went?



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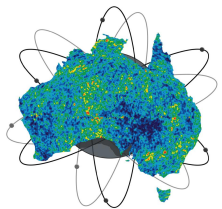


Collaboration of Australian  
Universities for research into  
*Quantum machines* and  
*Quantum Physics*



# CDM Road Trippers

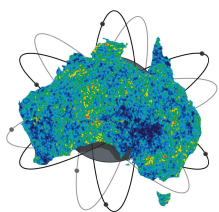
- Ben McAllister – Swinburne / UWA
- Elrina Hartman - UWA
- Emily Filmer - Adelaide
- Giorgio Busoni - ANU
- Graeme Flower - UWA
- Harish Potti - Adelaide
- Irene Bolognino - Adelaide
- Jackie Bondell - Melbourne
- Jeremy Bourhill - UWA
- Matt Gerathy - Melbourne
- Raghda Abdel Khaleq - ANU
- Renee Key - Swinburne
- Will Campbell - UWA



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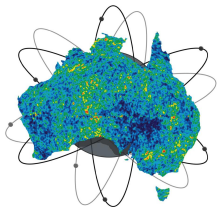
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# CDM Support

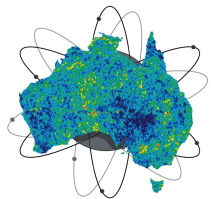
- Fleur Morrison
- Jackie Bondell
- Linda Barbour
- Anita Vecchies
- Kylie Hamill
- Michelle Abbott
- Node administrators



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**ROAD TRIP**

# Statistics

- 12,000km driven between Brisbane and Perth (2 cars) over 3 weeks
- 2000 people engaged with
- 40 cities and towns
- 25 regional and remote schools
- 14 Public events
- 24 Road trippers across CDM and EQUS
- 100s of hours of preparation
- Tons of fun



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**ROAD TRIP**

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**ROAD TRIP**

**Quairading Hotel**

**TRIVIA NIGHT**

**FREE ENTRY!**

**Fun! Trivia! Prizes!**

**Teams of up to 6 people**

**25 August 2022**

**7:00-9:00 pm**

Join the National Quantum & Dark Matter Road Trip in Quairading for an evening of pub trivia with a twist of science!

**national science week**

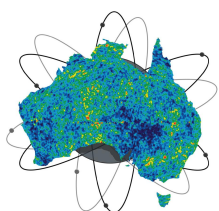
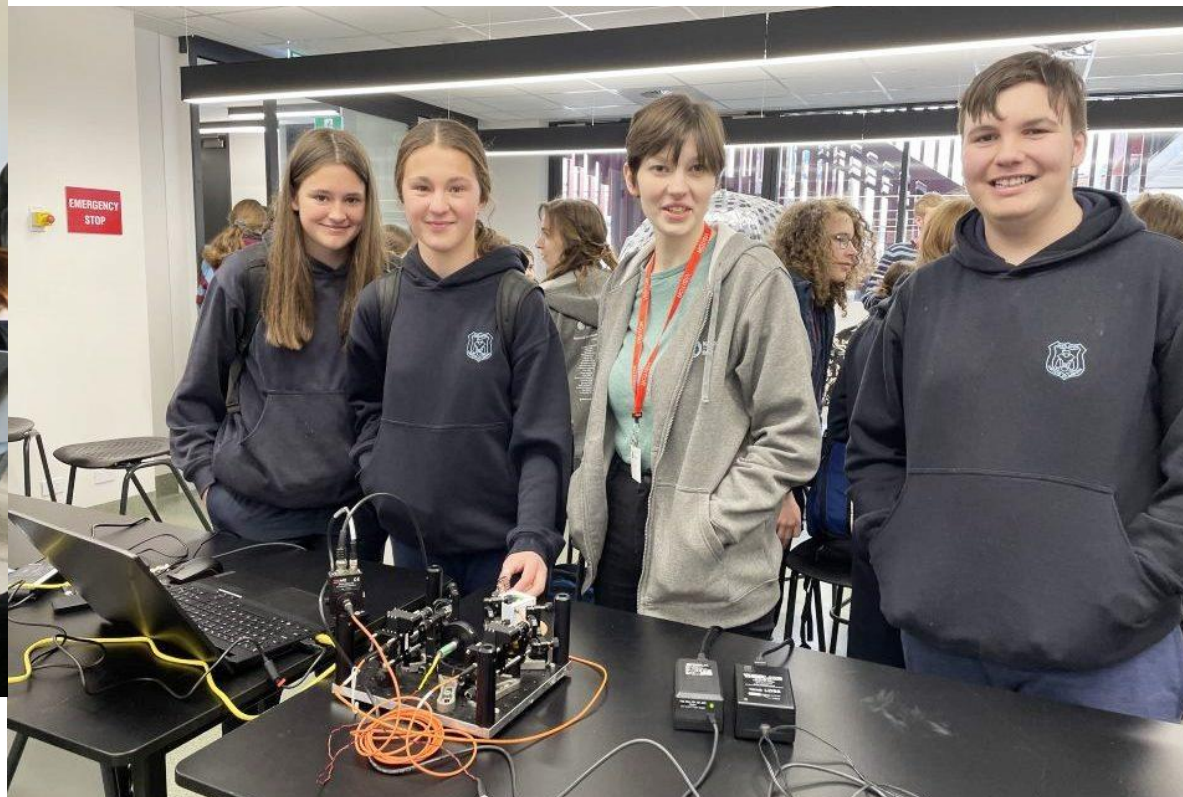
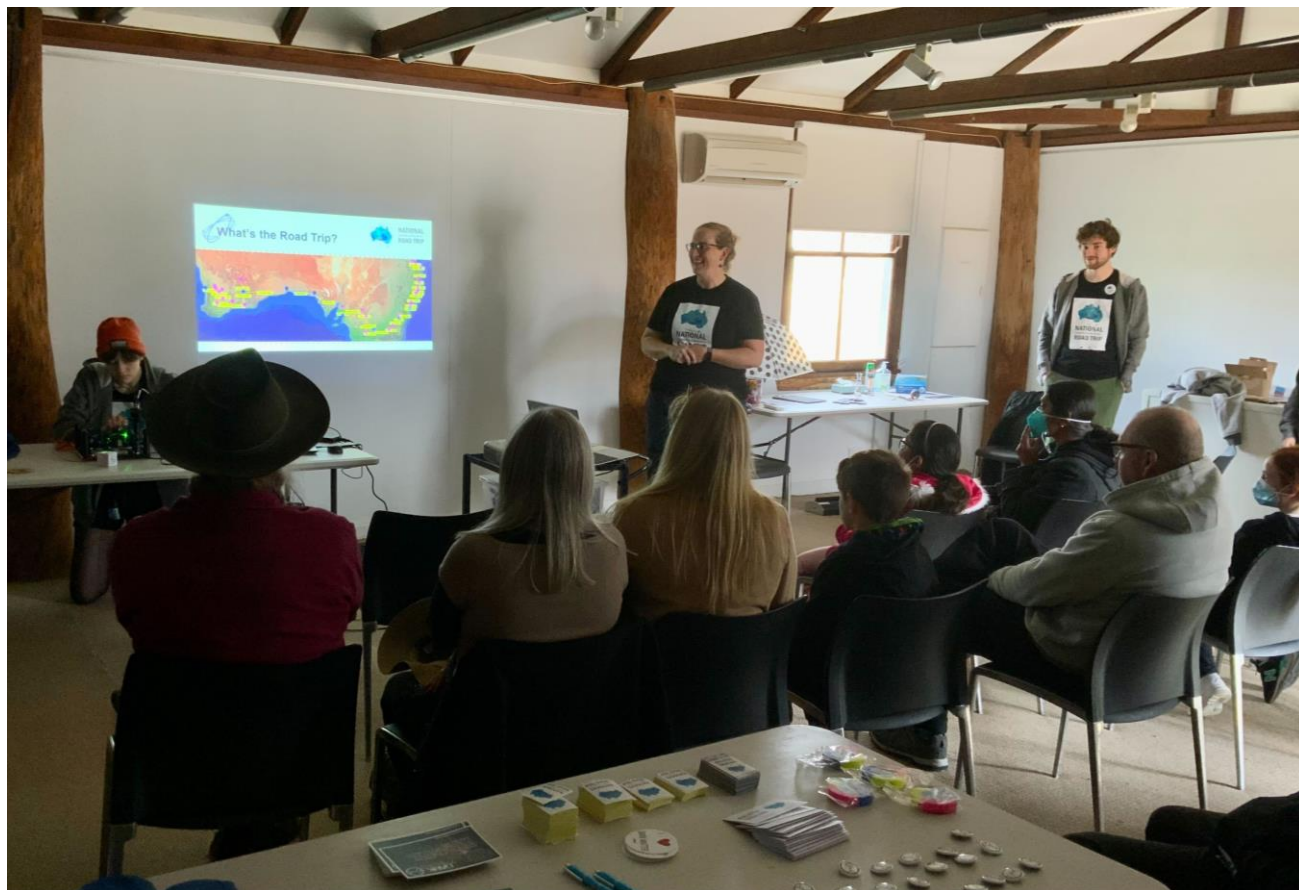
**DARK MATTER**  
PARTICLE PHYSICS

**EQUS**  
Australian Research Council  
Centre of Excellence for  
Engineered Quantum Systems

An Australian Government Initiative

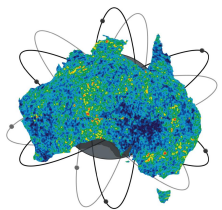
**Inspiring Australia**





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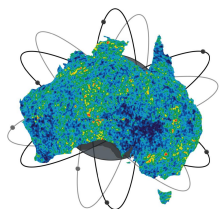




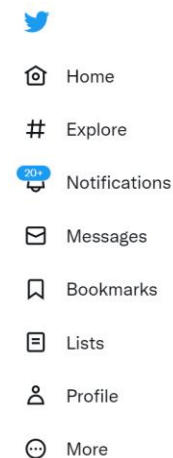
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# Promotion

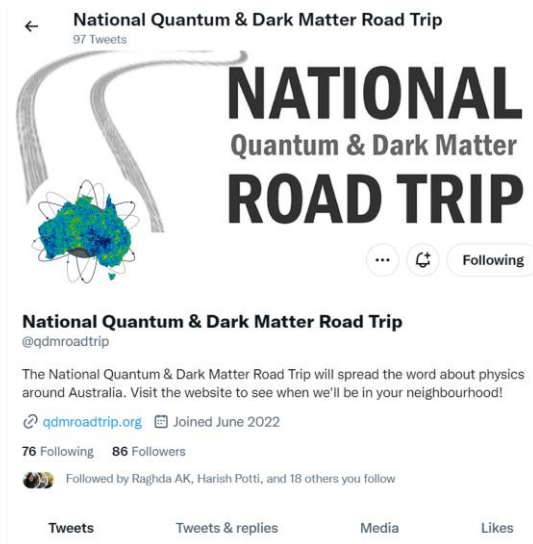
- Road Trip website
- NSW website
- Social media – Twitter, Instagram



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**Tweet**



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[HOME](#) [ABOUT](#) [EVENTS](#) [NEWS](#) [RESOURCES](#) [DIORAMA CHALLENGE](#) [PHOTOGRAPHY COMPETITION](#)

ROAD-TRIPPER



**Will Campbell**

PhD student

CDM & EQUS

University of Western Australia

Road-tripping Bendigo to Adelaide

**What do you do?**

My work involves looking at certain crystals, which vibrate at specific tones, much like a guitar string vibrates to make sound. We analyse this vibration to see whether any cool and interesting new particles are interacting with it, such as dark matter or gravitational waves.

**How did you get to where you are today?**

I always wanted to be an engineer and studied the required maths and physics to get into engineering. Slowly along the journey I fell in love with physics and the deeper understanding that comes with studying it. Also the people in physics are all great.

**What's the best thing about your role?**

The best thing about my role is being a small part of the cutting-edge developments that will shape the next generation of technology in the world; it's always inspiring and never dull.

**What advice would you give to someone considering studying physics?**

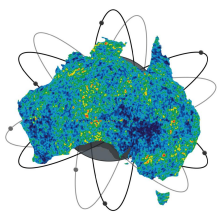
If you're currently studying physics or science, find out which part you enjoy the most and stick with it, it only ever gets more interesting and more fun as you delve further into it.

**What do you enjoy doing besides physics?**

Outside of physics, I love playing and watching AFL as well as playing a bit of music here and there.

[VIEW ALL ROAD-TRIPPERS](#)

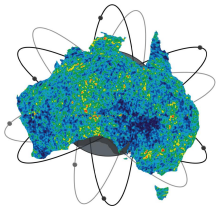




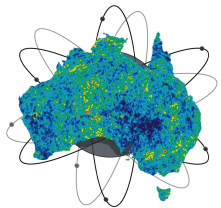
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# Feedback

- Top responses to how people would describe the experience
  - *Interesting, fun, cool, informative, educational*
- Top responses to how people would describe physics
  - *Interesting, cool, confusing, hard, fun*
- Was there anything about this experience that could be improved?
  - *Less talking, more interactive, more demonstrations, more hands on activities, more time, more pictures, show videos of dark matter, more prizes, more question time*
  - *“No, it was perfect”, “Nothing, it was amazing”, “No, it was awesome”*







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# Media Highlights

## Bendigo Advertiser

Dark Matter and quantum unpacked in nationwide science road trip

Lucy Williams • 2hrs ago



Kalgoorlie Miner Goldfields Regional WA

Quantum physics and dark matter explored by Eastern Goldfields College Year 12 students

Madeleine Clark | Kalgoorlie Miner  
Thu, 25 August 2022 4:00AM



MANNING RIVER  
**Times**

Teaching Dark Matter to bright young minds



Research roadtrip bringing science to kids in the bush

11/03/2022 11:50 AM / 05:23

SHARE THIS PODCAST



RURAL NEWS

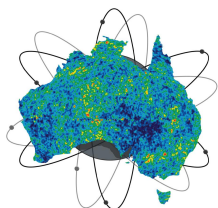


Yass Valley Times

HOME CLASSIFIEDS SUBS

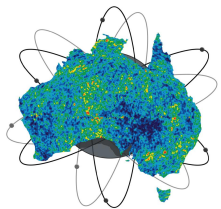
QUANTUM AND DARK MATTER ROAD TRIP AT YASS HIGH SCHOOL

Sep 9, 2022 | General | ★★★★★



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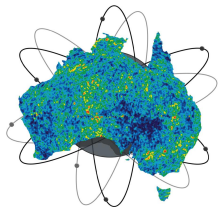


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# Media Highlights

Prior to the road trip, EQUS and CDM members were invited to express an interest in speaking to the media throughout the event. Nine road trip participants, including students, had the opportunity to speak to newspaper, television and radio media. Media included:

- AAP (syndicated across 100+ titles)
- ABC Bendigo
- ABC Goldfields and Esperance
- ABC Goulburn Murray – *Ben McAllister*
- ABC Great Southern – *Emily Filmer*
- ABC Midwest and Geraldton
- ABC Newcastle
- ABC Radio Melbourne
- ABC Statewide – *Ben McAllister*
- ABC Wimmera – *Jackie Bondell*
- Bendigo Advertiser
- Bendigo Hit FM – *Ben McAllister*
- Byron Bay FM – *Renee Key*
- Camden Haven Courier – *Giorgio Busoni*
- Canberra Life
- Canberra Weekly
- Kalgoorlie Miner
- Manning River Times
- Noongar Radio – *Jeremy Bourhill*
- The West Australian – *Jeremy Bourhill*
- Weekly Advertiser Stawell
- WIN News Toowoomba (syndicated across Qld) – *Renee Key*
- Yass Valley Times – *Ben McAllister*
- 2GB/3AW – *Ben McAllister*

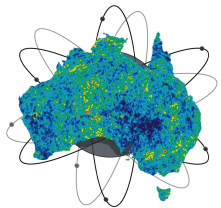


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**ROAD TRIP**

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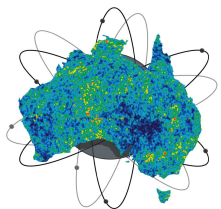


# Highlights & Lowlights



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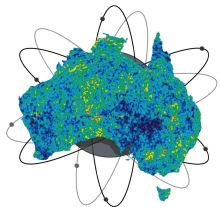
# Highlights & Lowlights



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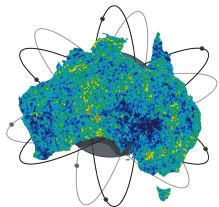
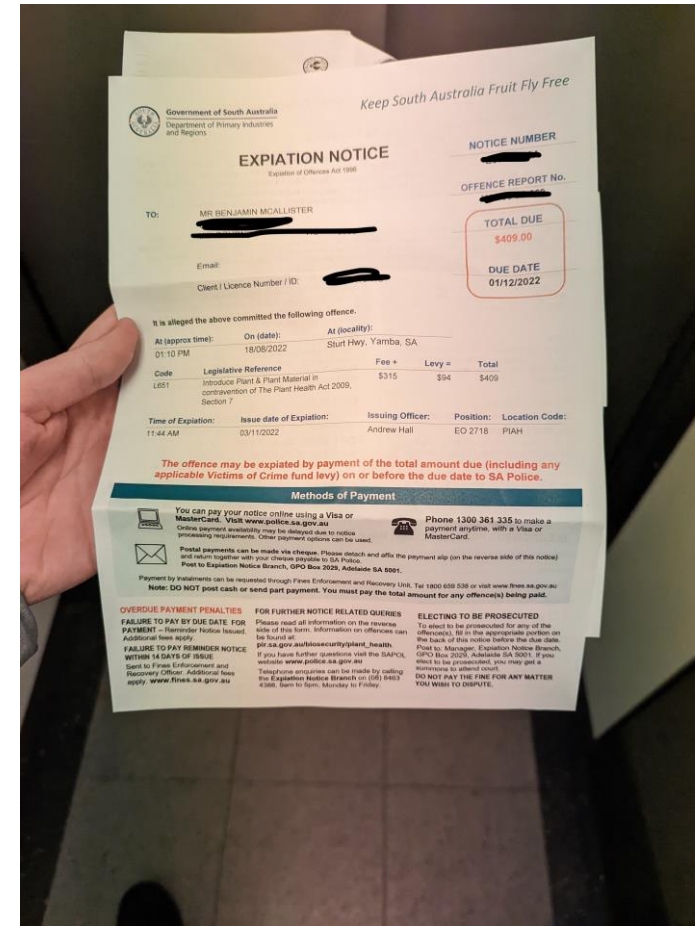
# Highlights & Lowlights



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**ROAD TRIP**

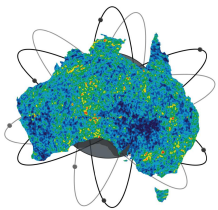
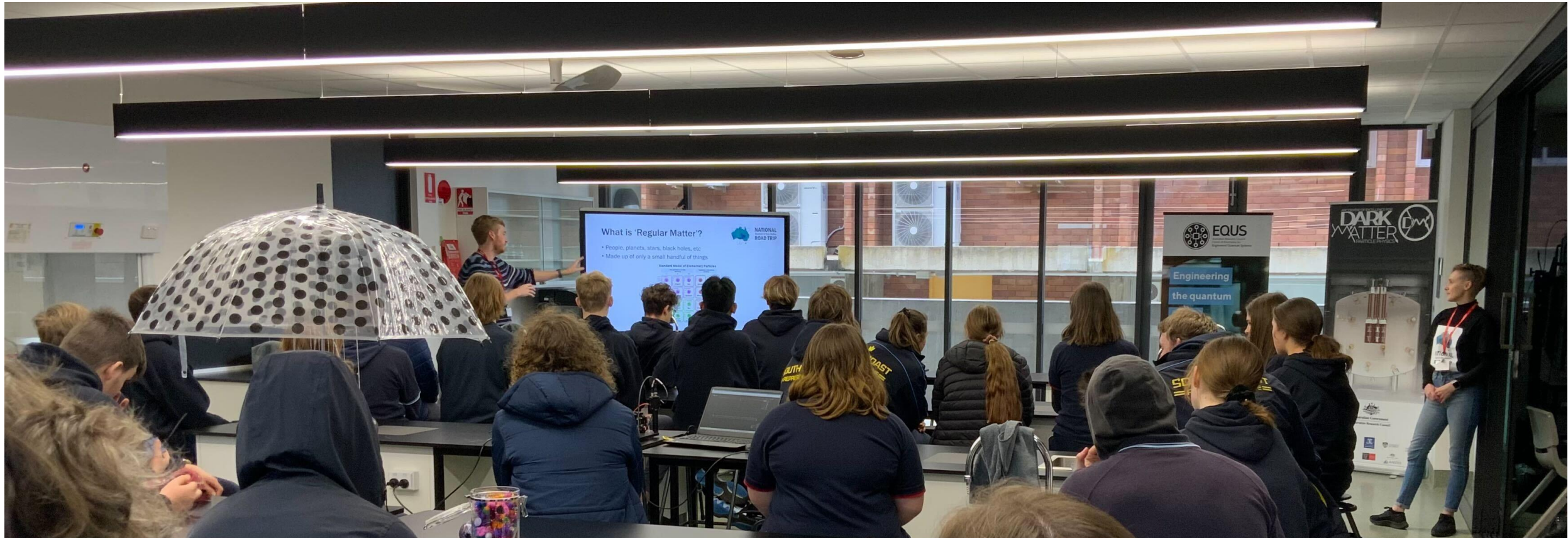


# Highlights & Lowlights



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# What next...2023



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**ROAD TRIP**